Bacterial infection secondary to pancreatic necrosis occurs in 40% to 70% of patients with severe acute pancreatitis. When infected pancreatic necrosis is present, as demonstrated by CT and detection of bacteria on needle aspiration of the necrotic area, surgical drainage is indicated via either the transperitoneal or extraperitoneal translumbar approaches.

The aim of this report is to present an innovative method for inspection and treatment of the pancreas after the open procedure as an alternative to the standard methods (closed continuous lavage and successive reoperations for debridement).

CASE REPORTS

Case 1

A 35-year-old man with a history of heavy alcohol consumption was admitted with epigastric pain, fever, and signs of peritoneal irritation. Evaluation revealed hyperamylasemia and the presence of more than 3 Ranson criteria, an Apache II score of 19 points, and an increased C reactive protein of 33 mg/dL (normal: 0.5 mg/dL). Dynamic CT demonstrated greater than 50% pancreatic necrosis. The patient was treated with parenteral nutrition and antibiotics and made good progress for the first 3 weeks. Subsequently, clinical symptoms of sepsis with respiratory distress appeared, requiring mechanical ventilation with the volume control regulated by resting pressure and nitric oxide. A CT-guided needle aspiration with culture of the material was positive for *Escherichia coli* and *Pseudomonas*, and a diagnosis of infected pancreatic necrosis was made. Drainage of the necrotic collection by means of a left lumbotomy via the extraperitoneal approach with debridement and irrigation of the cavity was performed with placement of 2 large-caliber tubes (Charrier 18 and 32, respectively) (Thoracic catheter, Kendall Policlinics, 08160, Montmeló, Spain) for continuous lavage and drainage.

Endoscopic exploration of the retroperitoneum was performed during the postoperative period with the drainage tubes. The lumbar drainage tube, located in the pancreatic space, is removed and through its track inserted, under direct vision and without air insufflation, a flexible endoscope (CV-100GIF100HL and/or GIF-PX20, Olympus Optical Co. (Europa), Hamburg, Germany) (Fig. 1). The endoscope was advanced into the retroperitoneal space and the condition of the pancreas assessed. The area was washed by aspiration and irrigation, and with the aid of endoscopic forceps (Fig. 2) after explanation and washing, the drainage tube was reinserted.

This patient underwent 4 sessions, 1 per week for a month. Necrotic debris were extracted (Fig. 3) and the pancreatic bed lavaged under direct observation to ensure that the residual space was completely cleansed and filled with granulation tissue. The patient made satisfactory progress but developed a tracheo-esophageal fistula due to prolonged intubation, which required corrective surgery. The patient remained in the intensive care unit for 85 days. Twenty-two months after hospital discharge the patient is asymptomatic.

Case 2

A 63-year-old woman with a history of biliary lithiasis...
was admitted for epigastric pain radiating to the back, together with fever and signs of peritoneal irritation. Evaluation revealed hyperamylasemia with the presence of 5 Ranson criteria, an Apache II score of 21 points, and a C reactive protein of 40 mg/dL. CT demonstrated pancreatic destruction with more than 50% glandular necrosis. The patient’s clinical condition deteriorated despite intensive support measures, and she required surgery 72 hours after admission. Cholecystectomy and choledochotomy, with extraction of a calculus at the papilla and T-tube drainage, were performed by using the transperitoneal approach. The approach to the pancreatic bed was via the gastrocolic omentum; a wide necrosectomy was performed and a system for continuous lavage and drainage was established through 2 extraperitoneal tubes (Charrier 18 and 32). Culture of the material obtained at surgery revealed *Escherichia coli* growth.

Endoscopic exploration of the retroperitoneum was performed as described above (Fig. 4). The patient required 9 such explorations, 1 every 3 days for a month. Complete cleansing of the pancreatic bed was achieved although the patient response to treatment of associated respiratory distress was poor. Moreover, a stercoraceous fistula developed at the hepatic flexure of the colon due to pressure from one of the drainage tubes. This closed spontaneously with conservative treatment. The patient remained in the intensive care unit for 76 days. She died due to multiple organ failure 21⁄2 months after the operation.

**DISCUSSION**

The aim of surgery for infected pancreatic necrosis is to eliminate the intraperipancreatic necrotic tissue and preserve viable pancreas to the maximum possible extent to avoid exocrine and/or endocrine pancreatic insufficiency as well as hemorrhage. However, severe acute pancreatitis is a dynamic process that continues to evolve, which means that areas of necrosis may extend over ensuing days. To deal with this, periodic reassessment of the retroperitoneal space is helpful, especially in cases in which the response to treatment is poor. This can be done with CT or by multiple surgical reoperations. Our alternative proposal is to perform serial retroperitoneoscopies. This meets 2 objectives—diagnosis and therapy—by allowing identification and extraction of the loose necrotic material that may not have been washed away. The main advantage of this technique is that it can be performed without moving the patient from the intensive care unit and with mild sedation if the patient is not intubated. It can be repeated as often as necessary and makes it possible to monitor the development of granulation tissue in the retroperitoneal space.

Conclusions cannot be drawn from two case reports, and prospective studies are needed with a sufficient number of patients to compare retroperitoneoscopy with standard methods.

**REFERENCES**